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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/281,421	03/30/1999	GURUDUTH SOMASEKHARA BANAVAR	YO998-525	7217

7590

08/12/2003

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EXAMINER

HO, CHUONG T

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/281,421

Applicant(s)
Banavar et al.

Examiner
Ho

Art Unit
2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Apr 2, 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 24-38, and 47-54 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 24-38, and 47-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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1. The amendment "B" filed 04/02/03 have been entered and made of record.
2. Applicant's amendment "B" filed 04/02/03 with respect to claims 1-15, 24-38, 47-54 have been considered but are moot in view of the new ground(s) of rejection.
3. Claims 1-15, 24-38, 47-54 are pending.

Claim Objections

4. Claims 1, 24, 47, 48, 50 are objected to because of the following informalities: "said routing being based on data content of said message irrespective of any destination information that may be within said message". The term "may be" should change to --is-- because the the term "may be" does not recite positive limitation. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-15, 24-38, 47-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bracho et al. (U.S. Patent No. 6,021,443) in view of Marco (U.S. Patent No. 6,266,337 B1).

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In the claims 1, 24, 47, 48, 49, 50, Bracho et al. discloses the network is a “store and forward” network whose routing is “content-based.” In a **content-based** routing system, information is routed **based on the content of the information**, and **not** on the address of publishers (source) or **subscribers (destinations)** in the system (see col. 2, lines 5-9) ; comprising:

- ◆ receiving a message; and routing message to multiple clients (see col. 2, lines 5-9, subscribers in the system, see col. 5, lines 48-51), the system includes means for receiving a message, and means for routing the message to a subset of clients of the network) of network, routing being based on data content of message irrespective of any destination information that may be within message (see col. 2, lines 5-9, col. 10, lines 18-67).

However, Bracho et al. is silent to disclose being resilient to router or link failure within network.

Marco discloses a packet retransmission eliminator is installed on opposite ends of a path in a network. Each original packet sent over the path is cached on the transmitting and the receiving ends of the path (see abstract); comprising:

- ◆ being resilient to router or link failure within network without loss of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

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Given the teaching of Marco , it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Bracho's system to being resilient to router or link failure within network in order to guarantee the message to be received by all subscriber.

7. In the claims 2, 25, 26, Bracho discloses network comprises a publish/subscribe system supporting content-based subscription, one or more clients comprise subscribers, and wherein routing comprises delivering message to all subscribers requesting a uniform delivery quality of service or if unable to deliver message to all of subscribers requesting uniform delivery, delivering message to none of subscribers requesting uniform delivery (see col. 2, lines 5-9, col. 10, lines 18-67).

8. In the claims 3, 27, Marco discloses receiving a message; logging the message to persistent storage within the routing network; and after logging, delivering message to one or more clients of network, wherein logging to persistent storage prior to delivering of message to one or more clients of network (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

9. In the claims 4, 28, Marco discloses logging message at least one logging node within network before delivering message to one or more clients of network, logging comprising storing message in persistent storage (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

10. In the claims 5, 29, Marco discloses subsequent to logging of message, sending a logging acknowledgment to at least one router of network routing message, upon receipt of logging acknowledgment at least one router, delivering message to a client thereof, client

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requiring delivering and comprising one client of one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

11. In the claims 6, 30, Marco discloses buffering message at least one router of network routing message, buffering occurring prior to storing of message at persistent storage and when passing message through at least one router to at least one logging node (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

12. In the claims 7, 31, Marco discloses a plurality of routers coupled together, one of routers comprising logging node having persistent storage associated therewith, logging comprising employing logging node having persistent storage associated therewith to store message and to thereafter send logging acknowledgment back to each router of network responsible for routing message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

13. In the claims 8, 32, Marco discloses network comprises a spanning tree and wherein method further comprises providing a logging node within spanning tree for logging message to persistent storage during routing of message to one or more client of network (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

14. In the claims 9, 33, Marco discloses logging of message to persistent storage to ensure a delivery quality of service of message to one or more clients of network notwithstanding failure of one or more routers or links within network (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

15. In the claims 10, 34, Marco discloses detecting failure of a router within tree before completing routing of message to one or more clients of network, reconfiguring tree to replace

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failed router with a new router, and automatically generating a request for retransmission of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

16. In the claims 11, 35, Marco discloses logging message within persistent storage of network and issuing a logging acknowledgment confirming storage of message to at least one router of tree through which message is routed to one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

17. In the claims 12, 36, 37, Marco discloses automatically generating request for retransmission of message occurs if new router detects from one or more of its child routers a logging number associated with message, logging number having been received in logging acknowledgment confirming storage of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

18. In the claims 13, 38, Marco discloses automatically informing a sender of message when the message has been lost within the network to allow the sender to retransmit message for routing to one or more clients of network so that message is delivered at least once to one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

19. In the claim 14, Marco discloses automatically informing a sender of message when the message has not been received by the network to allow the sender to retransmit message to the network for routing to one or more clients of network so that message is delivered at least once to one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

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20. In the claim 15, Marco discloses logging message at least one logging node within network before delivering message to one or more client of network, storing message into persistent storage, and wherein method further comprises subsequent to logging of message, sending a logging acknowledgment to at least one router of network routing message, and upon receipt of logging acknowledgment at least one router of network routing message, looking up routing information for message from a message table maintained at least one router, then sending logging acknowledgement across network using looked up routing information, and thereafter deleting routing information from message table (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

21. In the claims 51-54, Marco discloses routing of message to multiple clients of network is resilient to router failure within network without loss of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

Claim Rejections - 35 USC § 103

22. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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23. Claims 1-15, 24-38, 47-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandra et al. (U.S. Patent No. 6,091,724) in view of Marco et al. (U.S. Patent No. 6,266,337 B1).

In the claims 1, 24, 47, 48, 49, 50, Chandra et al. discloses the system includes receiving a message; and routing the message to a subset of client of the network. The subset include less than all of the clients of the network, and the routing is irrespective of any destination information that may be within the message (see col. 2, lines 48-52). The system includes a router being adapted to receive a message and being further adapted to determine, based on the data content of the message, zero or more links over which the message is to be sent. The determining is irrespective of any destination information that may be within the message (see col. 3, lines 14-18); comprising:

- ◆ receiving a message; and routing message to multiple clients (see col. 3, lines 20-25, the system includes means for receiving a message, and means for routing the message to a subset of clients of the network) of network, routing being based on data content of message irrespective of any destination information that may be within message (see col. 2, lines 48-52, col. 3, lines 14-18).

However, Chandra et al. is silent to disclose being resilient to router or link failure within network.

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Marco discloses a packet retransmission eliminator is installed on opposite ends of a path in a network. Each original packet sent over the path is cached on the transmitting and the receiving ends of the path (see abstract); comprising:

- ◆ being resilient to router or link failure within network without loss of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

Given the teaching of Marco, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Chandra's system to being resilient to router or link failure within network in order to guarantee the message to be received by all subscriber.

24. In the claims 2, 25, 26, Chandra discloses network comprises a publish/subscribe system supporting content-based subscription, one or more clients comprise subscribers, and wherein routing comprises delivering message to all subscribers requesting a uniform delivery quality of service or if unable to deliver message to all of subscribers requesting uniform delivery, delivering message to none of subscribers requesting uniform delivery (see col. 7, lines 25-30).

25. In the claims 3, 27, Marco discloses receiving a message; logging the message to persistent storage within the routing network; and after logging, delivering message to one or more clients of network, wherein logging to persistent storage prior to delivering of message to one or more clients of network (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

26. In the claims 4, 28, Marco discloses logging message at least one logging node within network before delivering message to one or more clients of network, logging comprising storing message in persistent storage (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

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27. In the claims 5, 29, Marco discloses subsequent to logging of message, sending a logging acknowledgment to at least one router of network routing message, upon receipt of logging acknowledgment at least one router, delivering message to a client thereof, client requiring delivering and comprising one client of one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

28. In the claims 6, 30, Marco discloses buffering message at least one router of network routing message, buffering occurring prior to storing of message at persistent storage and when passing message through at least one router to at least one logging node (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

29. In the claims 7, 31, Marco discloses a plurality of routers coupled together, one of routers comprising logging node having persistent storage associated therewith, logging comprising employing logging node having persistent storage associated therewith to store message and to thereafter send logging acknowledgment back to each router of network responsible for routing message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

30. In the claims 8, 32, Marco discloses network comprises a spanning tree and wherein method further comprises providing a logging node within spanning tree for logging message to persistent storage during routing of message to one or more client of network (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

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31. In the claims 9, 33, Marco discloses logging of message to persistent storage to ensure a delivery quality of service of message to one or more clients of network notwithstanding failure of one or more routers or links within network (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

32. In the claims 10, 34, Marco discloses detecting failure of a router within tree before completing routing of message to one or more clients of network, reconfiguring tree to replace failed router with a new router, and automatically generating a request for retransmission of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

33. In the claims 11, 35, Marco discloses logging message within persistent storage of network and issuing a logging acknowledgment confirming storage of message to at least one router of tree through which message is routed to one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

34. In the claims 12, 36, 37, Marco discloses automatically generating request for retransmission of message occurs if new router detects from one or more of its child routers a logging number associated with message, logging number having been received in logging acknowledgment confirming storage of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

35. In the claims 13, 38, Marco discloses automatically informing a sender of message when the message has been lost within the network to allow the sender to retransmit message for routing to one or more clients of network so that message is delivered at least once to one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

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36. In the claim 14, Marco discloses automatically informing a sender of message when the message has not been received by the network to allow the sender to retransmit message to the network for routing to one or more clients of network so that message is delivered at least once to one or more clients (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

37. In the claim 15, Marco discloses logging message at least one logging node within network before delivering message to one or more client of network, storing message into persistent storage, and wherein method further comprises subsequent to logging of message, sending a logging acknowledgment to at least one router of network routing message, and upon receipt of logging acknowledgment at least one router of network routing message, looking up routing information for message from a message table maintained at least one router, then sending logging acknowledgement across network using looked up routing information, and thereafter deleting routing information from message table (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

38. In the claims 51-54, Marco discloses routing of message to multiple clients of network is resilient to router failure within network without loss of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

Conclusion

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong Ho whose telephone number is (703)306-4529. The examiner can normally be reached on Monday-Friday from 9am to 3pm.

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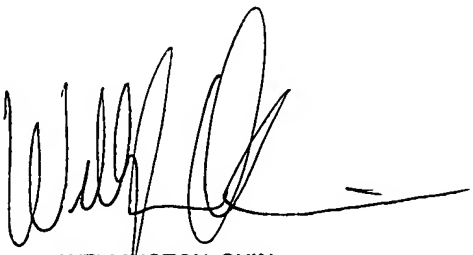
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40. If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington, Chin, can be reached on (703)305-4633.

Any inquiry of a general nature or relating to the status of this application or proceeding should be direct to the group receptionist whose telephone number is (703) 305-3900.

CH

Date 08-05-03



WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600